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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,373	09/14/2005	Hans Houben	14234	6170
Orum & Roth Suite 1616 53 West Jackson Boulevard Chicago, IL 60604-3606			EXAMINER ROGERS, DAVID A	
			ART UNIT 2856	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/549,373

Applicant(s)

HOUBEN ET AL.

Examiner

DAVID A. ROGERS

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Claim 1 is objected to because of the following informality. The applicant's amendment to claim 1 resulted in --...the rim well, wherein the contact surface intersects each of a set of mutually parallel first planes along a radius of curvature, which is generally elliptical--. Because of the use of the second comma it is not clear if the applicant is intending to claim that the rim well is elliptical or the "radius of curvature" is elliptical. If it is the later then the applicant is informed that a radius of curvature is a value not a shape. Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The applicant amended the claims to replace --curvature-- with --radius of curvature in response to the previous office action. In previous claim 3 the curvature of an outer section was smaller that the curvature of an inner section. That is the curve for a subsequent section was relatively flatter than the curve for a preceding section. This is an *increase* in the radius of curvature and not a decrease in the radius of curvature.

This is supported by the figures which show the outer sections; i.e., section 2c, having a radius of curvature greater than that of an inner section; i.e., section 2b. The same issue applies to claims 8 and 9 in that the curvature gets flatter as the distance from the midpoint increases.

It is requested that the applicant amend claim 3 so that it is properly described that the radius of curvature increases for subsequent sections. The applicant's written description should also be reviewed and corrected accordingly. It is also requested that claims 8 and 9 be amended so that they recite that the radius of curvature increases continuously (or the curvature decreases continuously).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites --the growth rate decrease...as the distance from the second plane rises--. There is insufficient antecedent basis for the limitations --the growth rate-- and --the second plane-- in the claim.

Claim 3 recites --the distance from the second plane rises--. There is insufficient antecedent basis for the limitation --the second plane-- in the claim.

Claim 6 recites --the sections--. There is insufficient antecedent basis for the limitation --the sections-- in the claim. It would appear that claim 6 should possibly

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depend on claim 3 vice claim 1. It is noted that claim 6 is examined under the assumption that it indeed does depend upon claim 3.

Claim 8 recites --the distance from the second plane rises--. There is insufficient antecedent basis for the limitation --the second plane-- in the claim.

Claim 10 recites --the second plane--. There is insufficient antecedent basis for the limitation --the second plane-- in the claim.

Claim Rejections - 35 U.S.C. § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 8-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by United States Patent 5,816,894 to Hosozawa *et al.*

Hosozawa *et al.* discloses a shaped member as shown in figure 9. The shaped member has a concave surface. Hosozawa *et al.* discloses that the surface formed will be generally elliptical. With regard to claim 1 the phrase --adapted for being connected with a rim...-- it is noted that the "adaptation" of the shaped member is the forming of the curved surface. Therefore, the shaped member of Hosozawa *et al.* is already adapted to be capable of being connected to a rim.

With regard to claim 1 the "set of mutually parallel first planes" as in the applicant's written description and figure merely indicate the infinite number of planes that form the thickness of the shaped member. The shaped member of Hosozawa *et*

al., being the same shape as the applicant's device, will inherently have the "set of mutually parallel first planes" as claimed.

With regard to claims 8 and 9 the curvature of the concave surface decreases continuously as the distance from the midpoint (which can be defined by a mid-plane) increases.

With regard to claims 10 and 11 the second plane, as used by the applicant, is a plane that defines a center of the shaped member. The shaped member of Hosozawa *et al.*, being the same shape as the applicant's device, will inherently have mirror-symmetry.

Claim Rejections - 35 U.S.C. § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 3-7, 10-12, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,549,125 to Nigon *et al.* in view of Japanese Laid Open Patent Application Publication JP-11308738 to Nakada.

Nigon *et al.* teaches a shaped member (reference item 20) for mounting to the rim of a wheel. The shaped member is adapted to monitor the pressure in the tire. Nigon *et al.* also teaches that the lower part of the shaped member is a contact surface that is curved to fit to existing rims. Nigon *et al.* states that numerous differently-sized shaped members must be produced in order to accommodate the known differently-

sized rims. Nigon *et al.* does not teach a single shaped member having a generally elliptical contact surface that can accommodate differently-sized rims.

Nakada teaches a shaped member (reference item 1) having a width, a thickness, and a curved contact surface. The curved contact surface is formed of a first arced section (reference item 3) having a small radius of curvature. The curved contact surface has a second arced section (reference items 4a and 4b) formed of a radius of curvature larger than the first arced section. The curved contact surface may also have a third arced section (reference items 5a and 5b) formed of a radius of curvature larger than the second arced section. The overall shape of the contact surface must be generally elliptical or hyperbolic in order to allow the different sections to properly mate with a specific sized object. As seen in figure 1B the sections allow the shaped member to accommodate differently-sized objects. The shaped object must inherently have a plurality of planes analogous to the planes (reference item 3) shown in the applicant's figure 1. It is also inherent that Nakada's shaped member also has a second plane that bisects the shaped member into two equal halves (a right half and a left half of the member shown in figure 4). This second plane must be perpendicular to the first planes.

It would have been obvious to modify the teachings of Nigon *et al.* with the teachings of Nakada to provide a shaped member having regions of different curvature in order to allow the member to accommodate differently-sized rims without the need for having separate parts. The selection of the curved contact surface to be generally elliptical (vice hyperbolic) is a matter of choice given the finite size of the shaped

member (its ends do not extend to infinity) and the fact that, within a certain width, an ellipse and a hyperbola have generally the same shape.

With regard to claim 3 the device of Nakada is shown as having three regions of curvature; i.e., region 3, regions 4a/4b, and regions 5a/5b. In order to accommodate differently-sized items; i.e., items with increasing radii, the outer regions must have a radius of curvature that is larger than the inner regions.

With regard to claim 4 it is evident from Nakada's figure 1B that the individual curved sections have a constant radius of curvature.

With regard to claim 5 it is evident from Nakada's figure 1B that the radius of curvature changes abruptly between two adjacent sections.

With regard to claim 6 it would appear from Nakada's figures that the individual sections are of equal length.

With regard to claim 7 it is considered obvious to adapt the teachings of Nakada to provide the inner curved sections; i.e., both halves of section 3, to have arc lengths larger than the outer sections. By adapting the teachings of Nakada to make the outer sections have smaller arc lengths than the inner section; i.e., section 3 (actually half of section 3) would allow the small sensor of Nigon *et al.* to be adapted to numerous rims, but yet still have a small size.

With regard to claims 10-12 it is evident from Nakada's figure 1B that both halves of the shaped member have the same general shape, and that opposing sections have the same radius of curvature. It would be necessary to have opposing sections to have

the same conforming curvature and the same center of curvature in order to ensure that the shaped member fits correctly to larger items.

With regard to claim 16 and 18 Nigon *et al.* teaches that the shaped member is a housing for sensors including a pressure sensor. The electronics (reference item 38) can be considered a device for measuring the pressure.

With regard to claim 17 the housing of Nigon *et al.* is a carrier for various other element such as the antenna (reference item 38), the electronics (reference item 38), and/or the battery (reference item 40).

10. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nigon *et al.* and Nakada as applied to claim 1 above, and further in view of United States Patent 4,316,374 to Nagatsuma.

Nigon *et al.* and Nakada collectively teach that it is known to provide a sensor for mounting to the inner surface of a rim. Nigon *et al.* and Nakada do not expressly teach a sensor having a contact surface that extends in a convex manner in a direction parallel to the axis of the rim; e.g., along the lines of intersection with third planes that intersect the curve perpendicularly.

Nagatsuma, however, teaches that known rims (reference item 21) have a generally concave surface when viewed in cross-section. See figure 6.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Nigon *et al.* and Nakada with the teachings of Nagatsuma in order to provide a convex surface on the shaped member of Nigon *et al.* in order to allow the housing of Nigon *et al.* to properly mate to the convex surface of

known rims; especially given that Nigon *et al.* teaches that the contact surface must be curved to fit to existing rims.

With regard to claims 14 and 15 it is considered obvious and one of ordinary skill in the art would be motivated to adapt the size and shape of the contact surface to fit a particular rim so that the maximum surface area can be made available for bonding. See also MPEP 2144.04 citing *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.).

11. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nigon *et al.* and Nakada as applied to claim 1 above, and further in view of United States Patent 5,699,041 to Ballyns.

Nigon *et al.* and Nakada teach a shaped member attached to the rim of a wheel. Nigon *et al.* teaches that the shaped member can be mounted to the rim using pins (reference item 18) and a locking plate (reference item 26). Nigon *et al.* does not teach a shaped member attached to the rim by bonding or an adhesive.

Ballyns teaches a shaped member attached to the rim of a wheel. Ballyns teaches that the shaped member can be glued, welded, or soldered, or any suitable way. See column 3 (lines 15-19). With regard to claim 22 the glue, weld, or solder must be durable so as to prevent the item from coming detached prematurely.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Nigon *et al.* and Nakada with the teachings of

Ballyns in order to glue or bond the shaped member to the rim as one of ordinary skill would easily recognize that these are known methods for attaching items to wheel rims. The claims would have been obvious because the substitution of one method for attaching with other known methods would have been obvious to one skilled in the art to achieve the predictable result of securing the shaped member to the rim.

Response to Arguments

12. Applicant's arguments filed 11 April 2008 have been fully considered but they are not persuasive.

The applicant argues that it is not understood why Nagatsuma is used. As one can see from the figures in Nagatsuma it is known that wheel rims have complex, convex contours. In order for the known shaped member of Nigon *et al.* to be attached to this convex contour the connecting surface should have a shape that matches the shape of the rim. That would require providing the shaped member with a concave surface that generally matches the convex surface of the wheel rim shown in Nagatsuma.

The applicant argues that Nigon *et al.* teaches the use of fasteners which has "little relevance to the claimed invention". It is noted that most claims in the pending application do not recite the type of bonding to be used. So, for claims 1-18, the applicant's argument is moot. With regard to claims 19-22 it was noted that Ballyns teaches known alternative means to secure items to wheel rims. The applicant argues that Nigon *et al.* teaches away from the claimed invention since Nigon *et al.* mentions the need for having differently sized member for differently sized wheels. The applicant

fails to properly consider the rejection as a whole where it is known from Nakada to provide a shaped member that can accommodate differently sized members.

The applicant argues that Nakada is non-analogous art. Nakada is clearly directed to the problem solved by the applicant by showing that is known to provide a shaped member that can accommodate differently sized members, especially members that are round. Therefore, Nakada is clearly analogous to the claimed invention.

With regard to the applicant's argument regarding McLaughlin *et al.* it is noted that the mention of this reference appears to have been in error. With regard to the applicant's argument regarding Albinski it is noted that the rejection is withdrawn at this time.

Allowable Subject Matter

13. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID A. ROGERS whose telephone number is (571)272-2205. The examiner can normally be reached on Monday - Friday (0730 - 1600). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David A. Rogers/
Primary Examiner, Art Unit 2856